

What I(we) claim is:

1. An exhaust gas purification apparatus of an engine comprising:
a reduction catalyst that is arranged in an exhaust system of the engine, for
reducing and purifying nitrogen oxide in an exhaust gas using a reducing agent; and
a reducing agent supplier provided with an injection nozzle having a tip end
portion, which extends towards a downstream side in an exhaust gas passage of
said exhaust system, substantially parallel with an exhaust gas flow direction, for
supplying said reducing agent to an exhaust gas on upstream side of said reduction
catalyst;
wherein an exhaust gas downstream side end portion of the tip end portion of
said injection nozzle has an exhaust gas downstream side end surface that is
blocked, and a ring shaped protruding ridge is provided on an outer peripheral
surface of the exhaust gas downstream side end portion, said protruding ridge
portion being formed with at least one injection hole for ejecting said reducing agent
in an outward direction from an axial center of the injection nozzle.
2. The exhaust gas purification apparatus according to claim 1, wherein said
protruding ridge portion is formed with a plurality of said injection holes that are
drilled in a radial pattern in an outward direction from the axial center of the tip end
portion of said injection nozzle.

3. The exhaust gas purification apparatus according to claim 1, wherein said injection hole is drilled diagonally in a direction tilted towards the downstream side with respect to the exhaust gas flow direction.

4. The exhaust gas purification apparatus according to any one of claim 1 through claim 3, wherein said ring shaped protruding ridge is formed in a shape that is tapered towards an outer peripheral surface.